Compliance with this limit, combined with the potential to emit CO, PM, PM_{10}, and $PM_{2.5}$ from other emission units at the source, shall limit the CO, PM, PM_{10}, and $PM_{2.5}$ emissions from the entire source to less than 250 tons per twelve (12) consecutive month period, each, and shall render the requirements of 326 IAC 2-2 (PSD) not applicable.

D.1.3 Best Available Control Technology (BACT) - VOC [326 IAC 8-1-6]

Pursuant to 326 IAC 8-1-6 (BACT) and SSM 089-34432-00345, the Permittee shall comply with the following Best Available Control Technology (BACT) requirements:

(a) The vapor recovery units, SDS VRU and SDS II VRU II, shall be controlled by open flare FL1 with an overall VOC control efficiency (including the capture efficiency and destruction efficiency) of equal to or greater than 98%, at all times that SDS VRU and/or SDS II VRU II are in operation, except during maintenance or malfunction of the flare FL1. During maintenance or malfunction of the flare FL1, the SDS VRU shall be controlled by the carbon adsorption system (C18) with an overall VOC control efficiency (including the capture efficiency and destruction efficiency) of equal to or greater than 98%, at all times that the SDS VRU is in operation and the SDS II VRU II shall be controlled by the carbon adsorption system (C38) with an overall VOC control efficiency (including the capture efficiency and destruction efficiency) of equal to or greater than 98%, at all times that the SDS II VRU II is in operation.

SDS I (b) VOC emissions after control from the SDS VRU shall be less than 23.4 tons of VOC per twelve (12) consecutive month period, with compliance determined at the end of each month.

SDS II (c) VOC emissions after control from all the emission units associated with the SDS II shall be less than 95.6 tons of VOC per twelve (12) consecutive month period, with compliance determined at the end of each month.

(d) Each of the emission units listed in the table below shall be controlled by the associated carbon adsorption system with an overall VOC control efficiency (including the capture efficiency and destruction efficiency) of equal to or greater than 98%, at all times that each of these emission units are in operation.

Emission Units	Carbon Adsorption System
SDS Shredder	C14
Anaerobic Thermal Desorption System enclosed feed conveyor	C15
Oil-Water Separator	C16
Water Tank	C17
Distillation Unit	C19
Tank 55	C20
Tanks 52 through 54	C21
Pot Still	C33
SDS Shredder II	C37
F-01 and F-02	C39
Tanks 81 through 84	C40
Tank 85	C41
Tank 86	C42
Tank 87	C43

(4) A description of the emission control equipment for each vessel described in 326 IAC 8-9-4(a) and 4(b), if applicable, or a schedule for installation of emission control equipment on vessels described in 326 IAC 8-9-4(a) and 4(b), if applicable, with a certification that the emission control equipment meets the applicable standards.

(b) A report containing the information described in (a) shall be submitted to IDEM, OAQ within 30 days of permit issuance.

D.1.8 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan is required for these facilities and their control devices. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

Compliance Determination Requirements [326 IAC 2-7-5(1)]

D.1.9 Testing Requirements [326 IAC 2-7-6(1),(6)] [326 IAC 2-1.1-11]

In order to demonstrate compliance with Conditions D.1.1(b), D.1.1(c), and D.1.3(a), the Permittee shall perform testing of flare FL1 controlling the SDS VRU and SDS II VRU II pursuant to the requirements of 40 CFR 60.18, utilizing methods as approved by the Commissioner, at least once every five (5) years from the date of the most recent valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C - Performance Testing contains the Permittee's obligation with regard to the performance testing required by this section.

D.1.10 VOC Emissions

Compliance with the VOC limit contained in Conditions D.1.1(c) and D.1.3(c) shall be determined using the following equations:

SDS II

$$V_{TOT} = \sum_{m=1}^{12}\left[V_S + V_{SHS} + V_{VRUII} + V_{T81-84} + V_{T85} + V_{T86} + V_{T87} + V_{F-01} + V_{F-02}\right]$$

$$V_S = \left(W * EF_S * \left(\frac{100\% - CE_S}{100\%}\right)\right)$$

$$V_{SHS} = \left(W * EF_{SHS}\right)$$

$$V_{VRUII} = \left(W * EF_{VRUII} * \left(\frac{100\% - CE_{F-CC}}{100\%}\right)\right)$$

$$V_{T81-84} = \left(U_{T81-84} * \left(\frac{100\% - CE_{T81-84}}{100\%}\right)\right)$$

$$V_{T85} = \left(U_{T85} * \left(\frac{100\% - CE_{T85}}{100\%}\right)\right)$$

$$V_{T86} = \left(U_{T86} * \left(\frac{100\% - CE_{T86}}{100\%}\right)\right)$$

$$V_{T87} = \left(U_{T87} * \left(\frac{100\% - CE_{T87}}{100\%} \right) \right)$$

$$V_{F-01} = \left(U_{F-01} * \left(\frac{100\% - CE_{F-01}}{100\%} \right) \right)$$

$$V_{F-02} = \left(U_{F-02} * \left(\frac{100\% - CE_{F-02}}{100\%} \right) \right)$$

Where:

V_{TOT} = Total emissions of VOC emissions after control from the SDS II (tons/year);
m = Each calendar month during the compliance period;
V_S = Total VOC emissions (after control) from the SDS II shredder per month (tons);
V_{SHS} = Total VOC emissions (after control) from the SDS II solids handling system per month (tons);
V_{VRUII} = Total VOC emissions (after control) from the SDS II VRU II per month (tons);
V_{T81-84} = Total VOC emissions (after control) from the Tanks 81 through 84 per month (tons);
V_{T85} = Total VOC emissions (after control) from the Tank 85 per month (tons);
V_{T86} = Total VOC emissions (after control) from the Tank 86 per month (tons);
V_{T87} = Total VOC emissions (after control) from the Tank 87 per month (tons);
V_{F-01} = Total VOC emissions (after control) from the F-01 per month (tons);
V_{F-02} = Total VOC emissions (after control) from the F-02 per month (tons);
W = Total weight of input material fed to the SDS II shredder per month (tons);
EF_S = VOC uncontrolled emission factor for the SDS II shredder (lb/ton);
EF_{SHS} = VOC uncontrolled emission factor for the SDS II solids handling system (lb/ton feed to the SDS II shredder);
EF_{VRUII} = VOC uncontrolled emission factor for the SDS II VRU II (lb/ton);
U_{T81-84} = VOC uncontrolled emissions for Tanks 81 through 84 (ton/yr);
U_{T85} = VOC uncontrolled emissions for Tank 85 (ton/yr);
U_{T86} = VOC uncontrolled emissions for Tank 86 (ton/yr);
U_{T87} = VOC uncontrolled emissions for Tank 87 (ton/yr);
U_{F-01} = VOC uncontrolled emissions for F-01 (ton/yr);
U_{F-02} = VOC uncontrolled emissions for F-02 (ton/yr);
CE_S = VOC control efficiency of the shredder carbon adsorption system (%);
CE_{F-CC} = VOC control efficiency of the flare FL1 or carbon adsorption system (%);
CE_{T81-84} = VOC control efficiency of the Tanks 81 through 84 carbon adsorption system (%);
CE_{T85} = VOC control efficiency of the Tank 85 carbon adsorption system (%);
CE_{T86} = VOC control efficiency of the Tank 86 carbon adsorption system (%);
CE_{T87} = VOC control efficiency of the Tank 87 carbon adsorption system (%);
CE_{F-01} = VOC control efficiency of the F-01 carbon adsorption system (%);
CE_{F-02} = VOC control efficiency of the F-02 carbon adsorption system (%);

Each of the VOC control efficiency values shall equal 98%.

D.1.11 VOC Emissions

Compliance with the VOC limit contained in Condition D.1.1(b) and D.1.3(b) shall be determined as follows:

$$V_{TOT} = \sum_{m=1}^{12}\left[W * EF_{VRU} * \left(\frac{100\% - CE_{F\text{-}CC}}{100\%} \right) \right]$$

Where:

V_{TOT} = Total emissions of VOC emissions after control from the SDS VRU (tons/year);
m = Each calendar month during the compliance period;
W = Total weight of input material fed to SDS shredder per month (tons);
EF_{VRU} = VOC uncontrolled emission factor for the SDS VRU (lb/ton);
$CE_{F\text{-}CC}$ = VOC control efficiency of the flare FL1 or carbon adsorption system (%); (this value shall equal 98%).

D.1.12 Emissions Controls [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

(a) In order to assure compliance with Condition D.1.6:

(1) The baghouses BH1-BH2 shall be in operation and control particulate emissions at all times that the shaker and conveyor system section of the Anaerobic Thermal Desorption System is in operation.

(2) In the event that bag failure is observed in a multi-compartment baghouse, if operations will continue for ten (10) days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.

(b) In order to assure compliance with Conditions D.1.2(a), D.1.2(b), and D.1.2(c):

(1) Baghouse BH3 shall be in operation and control particulate emissions at all times that the solids handling system, SHS is in operation.

(2) In the event that bag failure is observed in a multi-compartment baghouse, if operations will continue for ten (10) days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.

(c) In order to assure compliance with Conditions D.1.1(b), D.1.1(c), D.1.3(a), D.1.3(b), D.1.3(c), D.1.10, and D.1.11:

(1) The flare FL1 shall be in operation and control VOC emissions at all times that the VRU and/or VRU II is in operation except during maintenance or malfunction of the flare FL1. During maintenance or malfunction of the flare FL1, the carbon adsorption system (C18) shall be in operation and control VOC emissions at all times that the VRU is in operation and the carbon adsorption system (C38) shall be in operation and control VOC emissions at all times that the VRU II is in operation.